

We claim:

1. A computer program product for determining fiber connectivity along a line of a Synchronous Optical Network, the line having at least two network elements (NEs), each NE having at least one Circuit Pack Group (CPG), the computer program product comprising a computer-readable medium including:

instructions for configuring each CPG to enable section tracing;

instructions for populating a section trace transmit value of each CPG with a section trace identifier value unique to the CPG; and

instructions for reading a section trace received value of each CPG.

2. The computer program product of claim 1 wherein the computer-readable medium further includes instructions for setting a section trace format of each CPG to be sixteen bytes, and wherein each section trace identifier value unique to a CPG is a character string identifying the NE to which the CPG belongs, the CPG, and a wavelength associated with the CPG.

3. The computer program product of claim 2 wherein the section trace identifier value unique to each CPG is a fifteen character string comprising seven characters which identify the NE to which the CPG belongs, five characters which identify the CPG, and three characters which identify the wavelength associated with the CPG.

4. The computer program product of claim 1 wherein each CPG has an original user configuration, and the computer-readable medium further includes:

5 instructions for determining the original user configuration of each CPG;

instructions for storing the original user configuration of each CPG; and

instructions for resetting the original user configuration of each CPG.

10 5. The computer program product of claim 2 wherein each CPG has an original user configuration, and the computer-readable medium further includes:

instructions for determining the original user configuration of each CPG;

15 instructions for storing the original user configuration of each CPG; and

instructions for resetting the original user configuration of each CPG.

20 6. The computer program product of claim 1 wherein the computer-readable medium further includes instructions for receiving as input an identification of a first network element of the line.

25 7. The computer program product of claim 4 wherein the computer-readable medium further includes instructions for receiving as input an identification of a first network element of the line.

8. The computer program product of claim 1, wherein the computer-readable medium further includes:

instructions for storing the section trace transmit value of each CPG; and

5 instructions for storing the section trace received value of each CPG.

9. The computer program product of claim 8, wherein the computer-readable medium further includes:

10 instructions for receiving as input an identification of a first selected NE;

instructions for reading the stored section trace transmit value of each CPG which belongs to the first selected NE;

15 instructions for reading the stored section trace received value of each CPG which belongs to the first selected NE;

instructions for displaying equipment information which identifies the first selected NE; and

20 instructions for displaying section trace information comprising at least one section trace block, each section trace block corresponding to one CPG in the first selected NE, each section trace block including the section trace transmit value and the section trace received value of the CPG to which the section trace block corresponds.

25 10. The computer program product of claim 9 wherein each CPG is either an upstream CPG or a downstream CPG, and wherein the section trace blocks are arranged so that the section trace blocks corresponding to upstream CPGs appear on

a first side of the section trace information and the section trace blocks corresponding to downstream CPGs appear on a second side of the section trace information.

11. A method of displaying fiber connectivity between a first network element (NE) and a second NE of a Synchronous Optical Network, each NE including at least one Circuit Pack Group (CPG), each CPG being either an upstream CPG or a downstream CPG, the method comprising the steps of:

reading a section trace transmit value of each CPG of the first NE;

reading a section trace received value of each CPG of the first NE;

displaying equipment information which identifies the first NE; and

displaying section trace information comprising at least one section trace block, each section trace block corresponding to one CPG in the first NE, each section trace block including the section trace transmit value and the section trace received value of the CPG to which the section trace block corresponds, and the section trace blocks being arranged so that the section trace blocks corresponding to upstream CPGs appear on a first side of the section trace information and section trace blocks corresponding to downstream CPGs appear on a second side of the section trace information.

12. The method of claim 11 comprising the further step of displaying equipment information and section trace information for the second NE alongside the equipment information and the section trace information for the first NE.

13. A computer program product for displaying fiber connectivity between a first network element (NE) and a second NE of a Synchronous Optical Network, each network element including at least one Circuit Pack Group (CPG), each CPG being either an upstream CPG or a downstream CPG, the computer program product comprising a computer-readable medium including:

instructions for reading a section trace transmit value of each CPG in the first NE;

instructions for reading a section trace received value of each CPG of the first NE;

instructions for displaying equipment information which identifies the first NE; and

instructions for displaying section trace information comprising at least one section trace block, each section trace block corresponding to one CPG in the first NE, each section trace block including the section trace transmit value and the section trace received value of the CPG to which the section trace block corresponds, and the section trace blocks being arranged so that the section trace blocks corresponding to upstream CPGs appear on a first side of the section trace information and section trace blocks corresponding to downstream CPGs appear on a second side of the section trace information.

14. The computer program product of claim 13 wherein the computer-readable medium further includes instructions for displaying equipment information and section trace information for the second NE alongside the equipment information and the section trace information for the first NE.